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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 10/552,377 | 08/15/2006 | Theodor Morel Fishler | 0-05-165 | 9287 |

42009 7590 06/23/2009

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| EXAMINER |
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PIHONAK, SARAH

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| ART UNIT | PAPER NUMBER |
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1617

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| MAIL DATE | DELIVERY MODE |
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06/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/552,377 | Applicant(s) FISHLER, THEODOR MOREL | |
| | Examiner SARAH PIHONAK | Art Unit 1617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-23 is/are pending in the application.
- 4a) Of the above claim(s) 21-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application is a 371 (national stage application) of PCT/IL04/00317, filed on 4/8/2004.

Priority

This application was filed on 8/15/2006, and claims foreign priority to Application No. 155435, filed on 4/14/2003. A certified copy of the foreign priority application has been received, and provides support to the instant claims. Therefore, the priority date given to the instant claims is 4/14/2003, and the effective US filing date is 4/8/2004.

Response to Restriction Requirement

1. Applicant's election with traverse of the invention of Group I, claims 1-6 and 8-20, in the reply filed on 3/2/2009 is acknowledged. The traversal is on the ground(s) that the US 5,478,482 patent does not teach the composition as instantly claimed, as the 5,478,482 patent teaches a composition comprised of lower amounts of oxidant than the instant invention. However, it is noted that the instant claims do not state the amount of biocide oxidant present. The US 5,478,482 patent does teach that the composition contains biocide oxidants such as isocyanuric acid derivatives, hypochlorites, halogenated hydantoins and borates (column 1, lines 7-10 and 26-36; column 4, line 13). Therefore, the US 5,478,482 patent does teach the composition, and as such, unity of invention between Groups I-II is not present.

The requirement is still deemed proper and is therefore made FINAL.

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2. Claims 21-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 3/2/2009.

3. Applicant is reminded that, in the event that the composition claims are found allowable, a rejoinder of the method claims to the composition claims will be considered.

Response to Arguments

4. In the office action dated 8/19/2008, a rejection of claims 21-22 under 35 USC § 112, second paragraph was made, as the claims were directed to a 'use'. In the response filed on 11/5/2008, these claims were amended to claim a method of treating bodies of water. The rejection of these claims under 35 USC § 112, second paragraph is therefore withdrawn due to the amendment.

In the action dated 8/19/2008, claims 1-20 and 23 had been rejected under 35 USC § 112, second paragraph, as the claims had contained indefinite language regarding the term 'low melting'. In the reply filed on 11/5/2008, the claims had been amended to define the low melting temperatures. Claim 11 has also been amended to include the ratio value between $\text{SiO}_2/\text{Na}_2\text{O}$. The rejection of these claims under 35 USC § 112, second paragraph is withdrawn due to the amendment.

In the office action dated 8/19/2008, claims 2-3 had been rejected under 35 USC § 112, first paragraph, for not being enabling for preparing active biocidal compositions.

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In the reply filed on 11/5/2008, the Applicant argued that heating of the oxidant would not destroy the ability to function as a biocide. The Applicant also cited the US 4,731,195 patent, in which a biocide is encapsulated by heating, and is effectively used afterwards. This argument is found persuasive, and the rejection of claims 2-3 under 35 USC § 112, first paragraph, is withdrawn.

5. The Applicant's arguments regarding the rejection of claims 1-2, 4-6, and 23 under 35 USC § 102(b) over Olson, US 4,731,195 patent, have been fully considered. In consideration of the claims, this rejection is withdrawn, and a new art rejection is made, which will be explained in detail further in this action. Accordingly, this action is made **NON-FINAL**.

6. The Applicant's arguments regarding the rejection of claims 7-16 under 35 USC § 103(a) over Olson, US 4,731,195 patent have been fully considered but are not found persuasive. Claims 7-16 of the instant application are drawn to a composition containing biocidal components that are mixed with inorganic compounds, which form a low-melting glass as a protective covering over the biocide agent when heated from 300 to 800 °C. Olson teaches compositions comprised of biocide oxidants which are encapsulated with different coatings, including inorganic compounds (column 3, lines 23-42, column 4, lines 36-53, and column 5, lines 38-column 6, lines 9). Olson also teaches inorganic compounds that have a melting temperature between 1100 F to 1600 F (approximately 590-870 °C), which are used to coat the biocide (column 5, lines 8-13). Additionally, Olson teaches that the inorganic compounds include sodium silicates such as sodium metasilicate and sequisilicate, and borates such as sodium and potassium

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borates (column 5, lines 49-51, and 60-61). It is known in the art that combinations of borates and silicates, when heated above their melting points, form thin glass coatings. The Applicant has argued that Olson teaches a multi-layered coating of the biocide, while the instant application is drawn to a non-layered mixture. However, it is noted that the instant claims are drawn to a biocidal composition 'containing' the mixture of biocide and inorganic compounds such as sodium silicates and borates. The term 'containing' is not exclusive, and is interpreted that other components can be included in the composition. Thus, the instant claims do not exclude layers of components. Additionally, it is noted that, in heating the mixture of the biocide and inorganic compounds as in the instant application, the inorganic mixture forms a coating around the biocide, lessening its oxidant capacity, which reduces the fire hazard. Therefore, the instant claims are directed to a composition of the coated biocide. The Applicant also states that it is known that, while normal glass comprised of silica melts at temperatures between 1400 to 1600 °C, the mixture of the silicates and borates results in a glass that melts at much lower temperatures, such as less than 800 °C. In response, it is noted that Olson does not teach that only silicates can be used to coat the biocide, but rather, that mixtures of different compounds can be used (column 5, lines 38-column 6, line 9). Therefore, Olson does not teach away from the present invention, but rather, renders it obvious. The rejection of claims 7-16 under 35 USC § 103(a) over Olson was proper and is maintained. The rejection will be restated below along with the new art rejection, for the Applicant's convenience.

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7. Instant claims 17, 18, and 20 had been rejected under 35 USC § 103(a) as being unpatentable over Jones et. al., US 5,478,482 patent. In consideration of these claims this rejection is withdrawn, and a new art rejection has been made, which will be discussed in detail further in this action.

8. Instant claim 19 had been rejected under 35 USC § 103(a) as being obvious over Olson, US 4,731,195 patent, in view of Jones et. al., US 5,478,482 patent. Instant claim 19 is drawn to the composition of instant claim 4, in the form of tablets, briquettes, granules, or powder. Olson teaches a composition comprised of a biocide, such as trichlorocyanuric acid, and inorganic compounds which act as coatings of the biocide. Jones et. al. teaches a composition comprised of a biocidal oxidant such as halogenated hydantoins (column 1, lines 34-36). As Olson and Jones et. al. teach biocide compositions, it would have been obvious for one of ordinary skill in the art to incorporate biocides such as hydantoins into the composition. The Applicant states that Jones et. al. teaches a lower amount of biocide in the composition than in the instant application. However, it is noted that the instant claims do not include a specific amount of biocide present. Additionally, it is noted that Olson teaches that the amount of active biocide agent present is between 30 to 95% by weight of the composition (claim 9, part (a)). Therefore, the rejection of claim 19 under 35 USC §103(a) over Olson in view of Jones et. al. was proper, and is maintained. This rejection will be included below for the Applicant's convenience, with the new art rejection.

9. Claims 1-6, and 8-23 are pending.

10. Claims 1-6 and 8-20 were examined.

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11. Claims 1-6 and 8-20 are rejected.

Claim Rejections-35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1-8, and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson, US 4,731,195 patent, in view of Jones et. al., US 5,478,482 patent.

15. Instant claims 1-6 are drawn to a biocidal composition, containing a biocide, such as trichloroisocyanuric acid, with inorganic compounds, which form a protective glass coating over the biocide active agent when heated between 300 to 800 °C. Instant claims 8-20 cite that the inorganic compounds comprising the protective coating are sodium silicates, and boric compounds such as boric acid and borax. The instant claims also cite that the sodium silicates have a SiO₂/Na₂O ratio between 2 to 5, and that the Na₂O comprises 12-15 % by weight. It is also cited that the borates comprise between

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10-15 % the weight of the composition, and the silicates 2-8% the weight of the composition. The composition also further comprises a flocculant, such as aluminum sulfate, and the composition exists in the form of tablets, etc.

Olson teaches a biocide composition comprised of halogen bleach agents such as trichlorocyanuric acid, and halogenated isocyanurate compounds (column 4, lines 36-38, 47-48, and 51). Olson also teaches that the active biocide agent is covered with a layer of inorganic compounds, such as sodium metasilicate (Na_2SiO_3), orthosilicate (Na_4SiO_3), and sodium sequisilicate, and borates such as sodium and potassium borates (Abstract, column 5, lines 39-62). Therefore, Olson teaches that the ratio of $\text{SiO}_2/\text{Na}_2\text{O}$ is within the range of 2 to 5, and that the content of Na_2O varies within the range of 12-25%, which meets claim 11. While borax and boric acid are not explicitly taught by Olson, it is known in the art that sodium and potassium borates are interchangeable with these compounds. While Olson does not explicitly teach that a mixture of borates and silicates are used for the coating, it is taught that a mixture of the inorganic compounds can be used (column 5, lines 38-column 6, line 9). Olson also teaches that the components of the inorganic coating, which includes the sodium silicates and borates, comprises between 2 to 30% by weight of the composition (column 6, lines 65-column 7, line 7), which meets claims 13-16.

Olson does not teach that the composition contains a flocculant such as aluminum sulfate, or oxidants such as dihalo-dialkyl-hydantoin. Olson also does not explicitly teach that the composition is in the form of tablets, etc.

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It is noted that while Olson does not explicitly teach that the inorganic component coating forms a low-melting glass over the active biocide agent when heated between 300 to 800 °C, Olson does teach that the composition can be heated to temperatures just below 1100 F to 1600 F (approximately 590-870 °C), which can vary depending upon the inorganic components (column 3, lines 23-34, and column 5, lines 8-17). It is known in the art that mixtures of borates and silicates form glass coatings when heated within the specified temperature range. Furthermore, Olson does teach an inorganic coating that surrounds the active biocide agent. The inorganic compounds which make up the coating include silicates and borates, as claimed in the instant invention. Therefore, the inorganic coating that reduces the oxidant ability of the biocide as disclosed for the instant invention is taught by Olson.

Jones et. al. discloses a biocide composition which contains halogenated hydantoins as oxidants, along with flocculants such as aluminum sulfate (Abstract, column 4, line 62-column 5, line 6; column 6, lines 53-56). Jones et. al. also teaches that the composition is in the form of tablets, sticks, etc. (column 4, lines 54-57).

Olson and Jones et. al. both teach biocide compositions comprised of oxidants. A reasonable expectation of success would have been expected by adding the constituents taught by Jones et. al. to the composition taught by Olson. Therefore, it would have been prima facie obvious for one of ordinary skill in the art, at the time of the invention, to incorporate oxidants such as halogenated hydantoins, and flocculants such as aluminum sulfate, into the composition taught by Olson, because both compositions are used as biocides.

Claim Objections

16. Instant claim 1 is objected to for the following reasons: line 5 of this claim states "...by forming a glass, characterized in that said *glad*". The word glad was interpreted as glass. The spelling correction of this word is requested.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH PIHONAK whose telephone number is (571)270-7710. The examiner can normally be reached on Monday-Thursday 8:00 AM - 6:30 PM EST, with Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on (571)272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.P.

/SREENI PADMANABHAN/

Supervisory Patent Examiner, Art Unit 1617